

Reply to Office Action of September 30, 2004  
Amendment Dated: October 5, 2004

Appl. No.: 10/617,039  
Attorney Docket No.: CSCO-032/7715

**Listing of Claims**

- 1        1. (Currently Amended): A method of processing multi-protocol label switching  
2        (MPLS) packets in a MPLS device, said method comprising:
  - 3            receiving a configuration data identifying a group of multi-labeled packets and a  
4            corresponding desired EXP value for a stack entry at a low level for said group of  
5            multi-labeled packets, wherein EXP corresponds to the experimental bit field in MPLS  
6            protocol;
  - 7            receiving a multi-labeled packet containing a data packet and a plurality of stack  
8            entries including a low stack entry at said low level;
  - 9            determining whether said multi-labeled packet falls in said group;
  - 10          setting EXP bits of said low stack entry to said corresponding desired value if said  
11        multi-labeled packet falls in said group; and
  - 12          forwarding said multi-labeled packet containing said desired value in EXP bits in  
13        said low stack entry.
- 1        2. (Original): The method of claim 1, wherein said MPLS device comprises an  
2        autonomous system border router (ASBR) located at an edge of a network managed by  
3        a service provider, wherein said service provider controls service levels in forwarding said  
4        multi-labeled packet further down a path by setting said EXP bits.
- 1        3. (Original): The method of claim 2, wherein said group of multi-labeled packets  
2        are identified by a value in EXP bits of a specific stack entry, wherein said determining  
3        comprises examining said multi-labeled packet as received for said value in EXP bits of  
4        said specific stack entry.
- 1        4. (Original): The method of claim 1, wherein said data packet is received in the  
2        form of Internet Protocol (IP).
- 1        5. (Currently Amended): A machine readable medium carrying one or more

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2 sequences of instructions for causing a multi-protocol label switching (MPLS) device to  
3 process packets, wherein execution of said one or more sequences of instructions by one  
4 or more processors contained in said MPLS device causes said one or more processors  
5 to perform the actions of:

6 receiving a configuration data identifying a group of multi-labeled packets and a  
7 corresponding desired EXP value for a stack entry at a low level for said group of  
8 multi-labeled packets, wherein EXP corresponds to the experimental bit field in MPLS  
9 protocol;

10 receiving a multi-labeled packet containing a data packet and a plurality of stack  
11 entries including a low stack entry at said low level;

12 determining whether said multi-labeled packet falls in said group;

13 setting EXP bits of said low stack entry to said corresponding desired value if said  
14 multi-labeled packet falls in said group; and

15 forwarding said multi-labeled packet containing said desired value in EXP bits in  
16 said low stack entry.

1 6. (Original): The machine readable medium of claim 5, wherein said MPLS  
2 device comprises an autonomous system border router (ASBR) located at an edge of a  
3 network managed by a service provider, wherein said service provider controls service  
4 levels in forwarding said multi-labeled packet further down a path by setting said EXP  
5 bits.

1 7. (Original): The machine readable medium of claim 6, wherein said group of  
2 multi-labeled packets are identified by a value in EXP bits of a specific stack entry,  
3 wherein said determining comprises examining said multi-labeled packet as received for  
4 said value in EXP bits of said specific stack entry.

1 8. (Original): The machine readable medium of claim 5, wherein said data packet  
2 is received in the form of Internet Protocol (IP).

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1        9. (Currently Amended): A MPLS (multi-protocol label switching) device  
2 processing MPLS packets, said MPLS device comprising:

3            a memory storing a configuration data identifying a group of multi-labeled packets  
4 and a corresponding desired EXP value for a stack entry at a low level for said group of  
5 multi-labeled packets, wherein EXP corresponds to the experimental bit field in MPLS  
6 protocol;

7            an inbound interface receiving a multi-labeled packet containing a data packet and  
8 a plurality of stack entries including a low stack entry at said low level;

9            a label processing block determining whether said multi-labeled packet falls in said  
10 group and setting EXP bits of said low stack entry to said corresponding desired value if  
11 said multi-labeled packet falls in said group; and

12            an outbound interface forwarding said multi-labeled packet containing said desired  
13 value in EXP bits in said low stack entry.

1        10. (Original): The MPLS device of claim 9, wherein said MPLS device comprises  
2 an autonomous system border router (ASBR) located at an edge of a network managed  
3 by a service provider, wherein said service provider controls service levels in forwarding  
4 said multi-labeled packet further down a path by setting said EXP bits.

1        11. (Original): The MPLS device of claim 10, wherein said group of multi-labeled  
2 packets are identified by a value in EXP bits of a specific stack entry, wherein said label  
3 processing block examines said multi-labeled packet as received for said value in EXP  
4 bits of said specific stack entry.

1        12. (Original): The MPLS device of claim 9, wherein said data packet is received  
2 in the form of Internet Protocol (IP).

1        13. (Currently Amended): A MPLS (multi-protocol label switching) device

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2 processing MPLS packets, said MPLS device comprising:

3       means for receiving a configuration data identifying a group of multi-labeled  
4       packets and a corresponding desired EXP value for a stack entry at a low level for said  
5       group of multi-labeled packets, wherein EXP corresponds to the experimental bit field in  
6       MPLS protocol;

7       means for receiving a multi-labeled packet containing a data packet and a plurality  
8       of stack entries including a low stack entry at said low level;

9       means for determining whether said multi-labeled packet falls in said group;

10       means for setting EXP bits of said low stack entry to said corresponding desired  
11       value if said multi-labeled packet falls in said group; and

12       means for forwarding said multi-labeled packet containing said desired value in  
13       EXP bits in said low stack entry.

1       14. (Original): The MPLS device of claim 13, wherein said MPLS device  
2       comprises an autonomous system border router (ASBR) located at an edge of a network  
3       managed by a service provider, wherein said service provider controls service levels in  
4       forwarding said multi-labeled packet further down a path by setting said EXP bits.

1       15. (Original): The MPLS device of claim 14, wherein said group of multi-labeled  
2       packets are identified by a value in EXP bits of a specific stack entry, wherein said means  
3       for determining examines said multi-labeled packet as received for said value in EXP bits  
4       of said specific stack entry.

1       16. (Original): The MPLS device of claim 13, wherein said data packet is received  
2       in the form of Internet Protocol (IP).

1       17. (Currently Amended): A provider network containing:  
2       a MPLS (multi-protocol label switching) device processing MPLS packets, said  
3       MPLS device comprising:

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4 a memory storing a configuration data identifying a group of multi-labeled  
5 packets and a corresponding desired EXP value for a stack entry at a low level for  
6 said group of multi-labeled packets, wherein EXP corresponds to the experimental  
7 bit field in MPLS protocol;

8 an inbound interface receiving a multi-labeled packet containing a data  
9 packet and a plurality of stack entries including a low stack entry at said low level;

10 a label processing block determining whether said multi-labeled packet falls  
11 in said group and setting EXP bits of said low stack entry to said corresponding  
12 desired value if said multi-labeled packet falls in said group; and

13 an outbound interface forwarding said multi-labeled packet containing said  
14 desired value in EXP bits in said low stack entry.

1 18. (Original): The provider network of claim 17, further comprising an edge  
2 device receiving said multi-labeled packet from a private network and forwarding said  
3 multi-labeled packet to said MPLS device.

1 19. (Original): The provider network of claim 18, wherein said MPLS device  
2 comprises an autonomous system border router (ASBR) located at an edge of a network  
3 managed by a service provider, wherein a service provider controls service levels in  
4 forwarding said multi-labeled packet further down a path by setting said EXP bits.

1 20. (Original): The provider network of claim 19, wherein said group of  
2 multi-labeled packets are identified by a value in EXP bits of a specific stack entry,  
3 wherein said label processing block examines said multi-labeled packet as received for  
4 said value in EXP bits of said specific stack entry.

1 21. (Original): The MPLS device of claim 19, wherein said data packet is received  
2 in the form of Internet Protocol (IP).

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1           22. (Original): The provider network of claim 19, further comprising a plurality  
2           of core devices to forward said multi-labeled packet from said edge device to said ASBR.